PATENT ABSTRACTS OF JAPAN

(54) SPEECH RECOGNITION APPARATUS, NAVIGATION SYSTEM USING THIS APERTURE AND VENDING SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a speech recognition apparatus which prevents erroneous recognition as far as possible and is improved in operability.

SOLUTION: For example, the request by a user in the state that a restaurant list is displayed may be either the assignment of the store name of the restaurant itself or the genre assignment to discriminate the genre of the restaurant further in details. Then, a recognition control section 35 acquires the state that the restaurant list is displayed from an operation control section 5. This control section, them, assigns the 'dictionary relating to the restaurant' to a dictionary management section 34. This dictionary management section 34 edits the selected dictionary extracting necessary component in accordance with the dictionary assignment from a pre-stored base dictionary and sets this dictionary in a recognition processing section 33. The five items; the prefectures, the cities, towns and villages, genre, details and conditions, are set in the base dictionary and, therefore, only the recognition vocabulary having the genre of a 'meal' is extracted in accordance with the genre among these items and the selected dictionary is set in this case.
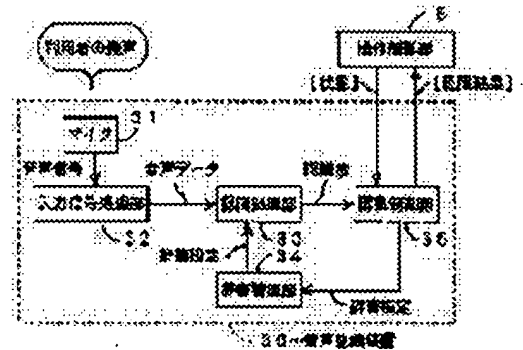
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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to a navigation system and an automatic selling system equipped with an effective voice recognition unit and its voice recognition unit, when enabling it to input a setup of the destination in a navigation system etc. with voice.
[0002]
[Description of the Prior Art] It is used in order that a user may input the name of a place for the destination which the voice recognition unit which makes the high thing of a coincidence degree a recognition result is already put in practical use as compared with two or more comparison object-pattern candidates conventionally memorized beforehand in the inputted voice, for example, should be set up in a navigation system with voice. Since neither button grabbing nor a screen gaze will follow if it is voice input when the driver itself uses especially a mounted navigation system, even if it carries out during transit of a car, since safety is high, it is effective.
[0003] However, it is unavoidable that the recognition result does not restrict with a right thing completely, but a certain amount of incorrect recognition arises with a current recognition technique. Therefore, when incorrect recognition occurs, it is necessary to redo the speech recognition itself again, and taking considerable time amount and time and effort to obtain the result which a user desires is also considered. The device which prevents incorrect recognition as much as possible from such a point is expected.
[0004] Then, this invention solves such a problem and aims at offering the voice recognition unit which prevented incorrect recognition as much as possible, and raised user-friendliness more. And also let it be the purpose to offer the navigation system and automatic selling system using the voice recognition unit.
[0005]
[The means for solving a technical problem and an effect of the invention] According to the voice recognition unit according to claim 1 made in order to attain the above-mentioned purpose, if a user inputs voice through a voice input means, a recognition means will make the high thing of a coincidence degree a recognition result as compared with two or more comparison object-pattern candidates beforehand memorized by the dictionary means in the inputted voice. A dictionary management tool performs the following managements to said dictionary means in that case. That is, the condition in the external device which treats a recognition result as a user's contents of directions is inputted, only a predetermined thing is temporarily extracted [from] based on the condition of having inputted, among two or more comparison object-pattern candidates memorized by the dictionary means, and only the comparison object-pattern candidate who extracted is confirmed as dictionary data in the case of the recognition in a recognition means.
[0006] The contents of the dictionary data used on the occasion of recognition as one of the causes of the incorrect recognition in the conventional speech recognition mentioned above are mentioned. That is, although speech recognition makes the high thing of a coincidence degree a recognition result as compared with the comparison object-pattern candidate beforehand memorized in the inputted voice, when the comparison object-pattern candidates are alike, that from which a desired comparison object pattern is different will be made into a recognition result. Even if it is the comparison object-pattern candidate beforehand set as the dictionary means with the voice recognition unit of this invention about this point, about the comparison object-pattern candidate who was not confirmed as dictionary data in the case of recognition with said dictionary management tool, it is not compared in the case of recognition, and though natural, it does not consider as a recognition result. Thus, generating of incorrect recognition can be prevented as much as possible by narrowing down dictionary data.
[0007] And dictionary data are not only narrowed down but it is narrowing down based on the condition in the external device which treats a recognition result as a user's contents of directions. For example, if a dictionary management tool is in the condition of said inputted external device as shown in claim 2, it is possible to confirm the other thing by making into an invalid the comparison object pattern considered [that it has not considered as the directions from a user, and] as dictionary data in the case of recognition. thus, if it carries out, since the comparison object pattern

considered to be the need from the condition of the external device in the time will remain as it is, and will be confirmed and except [its] will become invalid as dictionary data, the speech recognition about the vocabulary which should be recognized essentially is appropriately realizable, being able to prevent incorrect recognition as much as possible.

[0008] In addition, in the voice recognition unit mentioned above, in order to confirm some dictionary data, about the dictionary data made into the invalid on the contrary, it does not consider as the candidate for a comparison at all in the case of recognition. Therefore, even if the possibility as directions from a user is low, about the vocabulary which has been considered as directions, the view of supposing that it is effective as dictionary data also has it. However, when it confirms as dictionary data to the low thing of such possibility, the vocabulary which has the possibility of incorrect recognition in dictionary data will increase after all. When an example is taken in this point, it is also desirable to adopt the voice recognition unit shown in claim 3.

[0009] In the case of the voice recognition unit of claim 3, if a user inputs voice through a voice input means, a recognition means will make the high thing of a coincidence degree a recognition result as compared with two or more comparison object-pattern candidates beforehand memorized by the dictionary means in the inputted voice. A dictionary management tool performs the following managements to said dictionary means in that case. That is, the condition in the external device which treats a recognition result as a user's contents of directions is inputted, a priority is temporarily set up based on the condition of having inputted, about two or more comparison object-pattern candidates memorized by the dictionary means, and the higher comparison object-pattern candidate of the set-up priority makes it be easy to be used as dictionary data in the case of the recognition in a recognition means. For example, as shown in claim 4, it is possible to carry out the comparison object pattern considered that the probability which has been considered as the directions from a user in the condition of the inputted external device is high that it is easy to be used as dictionary data in the case of recognition.

[0010] Possibility of being recognized accidentally [candidate / to which the priority is low set if, as for one side, a priority is highly set up even if the two comparison object-pattern candidate which will incorrect-be easy to be recognized, for example if it does in this way exists, and another side is set up low / comparison object-pattern] becomes low, and incorrect recognition can be prevented as much as possible as a result. Moreover, although a priority is low, since it finally exists as a candidate for recognition also about the comparison object-pattern candidate by whom the priority is set up low, obtaining as a recognition result is possible. therefore -- since [for example,] it is not that for which it asks from a user although outputted as a recognition result in order of the high comparison object-pattern candidate of a priority as a voice recognition unit -- another recognition result -- ****** -- it needs -- if there are directions, finally, the low comparison object-pattern candidate of the priority is outputted as a recognition result, and can also become the thing of a request of a user .

[0011] That is, in the situation which does not correspond and go out by perfect alternative used of /Not being carried out, the technique of setting up a priority is effective. By the way, when using a voice recognition unit according to claim 1 to 4 as an object for navigation systems, it is possible to constitute, as shown in claim 5. That is, it has a voice recognition unit according to claim 1 to 4 and navigation equipment, and in order that a user may input with voice directions of predetermined navigation processing associated data with the need of specifying the voice input means of a voice recognition unit when navigation equipment carries out navigation processing at least, it uses.

[0012] As "predetermined navigation processing associated data" in this case, the destination is mentioned as a typical thing, as that destination, it may be the name of a place itself, or there are also cases, such as a facility and a store name. Moreover, the directions which have the need for assignment when carrying out navigation processings, such as condition selection about root retrieval, besides it are included. In specifying the destination by the facility, a store name, etc., out of the database, conditioning is carried out and it narrows down in many cases. In that case, when narrowing down in a genre which is called restaurant, for example, the dictionary data about a facility or a store name which have not been made into the offer location of a meal should just set up an invalid or a priority low. As shown especially in claim 6, since common navigation equipment can display a map and a menu on a display, it is made into an invalid as dictionary data in the case of recognition of the comparison object pattern considered [that a dictionary management tool cannot be considered as the directions from a user in the contents of a display concerned based on the contents currently displayed on the display, and], or should just make a priority low. If it is the screen display which will display the list of restaurants if it says in an above-mentioned example, since it is unthinkable to require map actuation of "map sense modification", "map scale modification", etc., etc. in the condition, the comparison object-pattern candidate of the vocabulary relevant to it should just make the invalid or the priority low.

[0013] On the other hand, when using a voice recognition unit according to claim 1 to 4 as an object for automatic selling systems, it is possible to constitute, as shown in claim 7. That is, it has a voice recognition unit according to claim 1 to 4 and automatic selling equipment, and in order that a user may input with voice directions of predetermined automatic selling processing associated data with the need of specifying the voice input means of a voice recognition unit when said automatic selling equipment carries out selling processing for the article for sale at least, it uses.

[0014] Automatic selling equipment here is selling equipments, such as tobacco and potable water, and when a user specifies the brand of the article itself with voice, the specified article will be sold. As shown in claim 8 in this case, a voice recognition unit While having the comparison object-pattern candidate about the proper noun of all the articles whose sale on the theory is enabled with automatic selling equipment as dictionary data in a dictionary means, a dictionary management tool About the comparison object-pattern candidate about proper nouns other than the article which can actually be sold at the time of automatic selling equipment, it is possible to make it an invalid as dictionary data temporarily, or to make a priority low. For example, when the automatic selling system of tobacco is considered, the comparison object-pattern candidate corresponding to the proper noun of the tobacco of all the brands in which sale on the theory is possible is prepared as dictionary data. And per automatic selling equipment, about the comparison object-pattern candidate about proper nouns other than the brand of the tobacco actually sold with the equipment, it is temporarily made an invalid as dictionary data, or the priority is set up low. Specifically, the manager of automatic selling equipment etc. should just do a manual setup. If it does in this way, since dictionary data can be adjusted according to whether choose the tobacco of what kind of brand and it considers as the object of automatic sale, it is lost that tobacco of the brand which is not carried with the automatic selling equipment is made into an incorrect recognition result. Therefore, the user-friendliness for the user of automatic selling equipment also improves. In addition, in this case, about the comparison object-pattern candidate about the proper noun of the brand which is not carried, it can be said that it is desirable rather than the direction made into the invalid as dictionary data makes a priority low.

[0015]

[Embodiment of the Invention] Hereafter, the example to which this invention was applied is explained using a drawing. In addition, as long as the gestalt of operation of this invention belongs to the technical range of this invention, without being limited to the following example in any way, it cannot be overemphasized that various gestalten can be taken.

[0016] [1st example] drawing 1 is the block diagram showing the outline configuration of the navigation system 1 for mount which applied the voice recognition unit 30. This navigation system 1 inputs the actuation situation from the actuation switch section 4 which consists of a voice recognition unit 30, a device switch 2, and a remote control switch 3, and its actuation switch section 4 etc. It is based on the recommendation root calculated in the current position calculation section 6 for computing the actuation control section 5 and the self-car current position which control the whole navigation system, the path computation section 7 which computes the suitable root (recommendation root) to the destination based on the destination which the user set up, and the path computation section 7. It has the guidance control section 8 which performs control processing which provides a user with guidance required in order to advance operation of a car smoothly with voice, a simple map, etc., the map data retrieval section 9, the voice output control section 11, the loudspeaker 12, the display and control section 13, and the display 14. In addition, the actuation control section 5 is constituted as a usual computer, and the interior is equipped with the bus line which connects well-known CPU, ROM, RAM, I/O, and these configurations.

[0017] Said current position calculation section 6 has the GPS receiver for GPS (Global Positioning System) to which all detect the location of a car based on the electric wave from a gyroscope, a well-known distance robot, and a well-known satellite. Since each has the error from which a property differs, these sensors etc. are constituted so that it may be used by two or more sensors, interpolating respectively. In addition, you may constitute from a part of the inside mentioned above depending on precision, and an earth magnetism sensor, the rotation sensor of a steering, the wheel sensor of each rolling ring, etc. may be used further.

[0018] The map data retrieval section 9 is equipment for inputting the various data containing the so-called data for map matching, map data, and mark data for the improvement in precision of location detection. Although it is common as a medium to use CD-ROM and DVD from the amount of data, other media, such as a memory card, may be used.

[0019] A display 14 is a color display and can display in piles the car current position mark inputted from the current position calculation section 6, the map data inputted from the map data retrieval section 9, and addition data, such as an induction path further displayed on a map, and a mark of the setting point mentioned later, on the screen of a display 14.

[0020] A touch switch or a mechanical switch etc. which was united with the display 14 is used, and the device switch 2 is used for the destination and the various inputs for path computation. Moreover, it enables it to carry out the same directions input as the device switch 2 through a remote control switch 3. And a voice recognition unit 30 is equipment for directing the destination etc. similarly to being used in order that the above-mentioned device switch 2 or a remote control switch 3 may direct the destination etc. by manual operation, when a user inputs with voice. In addition, as the actuation switch section 4, it must not necessarily have all these voice recognition units 30, the device switches 2, and remote control switches 3, and at least any one, although the desired directions input is possible, by this example, it shall consider convenience and shall have three simultaneously.

[0021] Next, the voice recognition unit 30 which constitutes a part of this actuation switch section 4 is explained in

more detail with reference to <u>drawing 2</u> . The voice recognition unit 30 is equipped with the microphone 31 as a "voice input means", the input signal processing section 32 which carries out transform processing of the sound signal inputted through the microphone 31 to the gestalt in which data processing is possible by A/D conversion etc., the recognition processing section 33 as a "recognition means", the dictionary Management Department 34 as a "dictionary means" and a "dictionary management tool", and the recognition control section 35 that functions also as a part of "dictionary management tool."

[0022] In addition, although not illustrated to <u>drawing 2</u> , the voice input approach in this example is the operation of inputting voice through a microphone 31, while a user pushes an PTT (Push-To-Talk) switch. The input signal processing section 32 performs voice input processing through a microphone 31, when it has judged whether the PTT switch was pushed and the PTT switch is pushed, but when not pushed, specifically, it is made not to perform the voice input processing. Therefore, while the PTT switch is pushed, only the voice data inputted through the microphone 31 will be outputted to the recognition processing section 33.

[0023] The recognition processing section 33 outputs the high high order comparison object pattern of whenever [coincidence] to the recognition control section 35 as compared with a comparison object-pattern candidate into the dictionary data set up in the voice data inputted from the input signal processing section 32. Recognition of the word sequence in input voice carries out sonagraphy of the voice data inputted from the input signal-processing section 32 one by one, extracts acoustical characteristic quantity (for example, cepstrum), and obtains the acoustical characteristic quantity time series data obtained by this sonagraphy. And it asks for which word in which these time series data were divided into some sections, and each section was stored as dictionary data by well-known DP matching method is supported.

[0024] In addition, the recognition result outputted to the recognition control section 35 from the recognition processing section 33 is not necessarily one. For example, there is also a thing of the vocabulary of high order plurality of the similar judging result in the recognition processing section 33 or two or more vocabularies which have been recognized. Since a speech recognition technique is pattern matching of the registered word for recognition, and the incorporated voice, it is common to output two or more high things of whenever [coincidence] as a recognition result. For example, if the pattern of "WAKAYAMAKEN" and "Okayama Ken" is alike when an all-prefectures name is used as a recognition dictionary, the above-mentioned two may be outputted as a recognition result to utterance of the user "Okayama Prefecture." Moreover, it is also possible to recognize two vocabularies, "Nagoya-shi" and an "art gallery", as a separate thing to utterance of a user, for example, "the art gallery of Nagoya-shi", and to output a recognition result with the latest technique.

[0025] And the recognition control section 35 acquires a condition from the actuation control section 5 while outputting the recognition result to the actuation control section 5. With this condition, it acquires that a navigation system 1 is in what kind of established state at present etc. And based on the condition of having acquired, dictionary assignment is performed to the dictionary Management Department 34.

[0026] The dictionary Management Department 34 sets the memorized dictionary data as the recognition processing section 33. Although the recognition processing section 33 performs recognition processing based on this set-up dictionary data, the dictionary Management Department 34 does not necessarily set it as the recognition processing section 33 in the same condition as the memorized dictionary data usual state. That is, if there is dictionary assignment from the recognition control section 35, the dictionary data edited based on the assignment will be set as the recognition processing section 33. About the contents of this dictionary edit, it mentions later.

[0027] Next, actuation of the navigation system 1 of this example is explained. In addition, since the part related to a voice recognition unit 30 is the description, suppose that actuation of the part related to a voice recognition unit 30 is explained in detail after explaining the general actuation as a navigation system briefly.

[0028] A driver from the menu displayed on a display 14 after power-source ON of a navigation system 1 with the device switch 2 or a remote control switch 3 In order to display a guidance path on a display 14, when path information-display processing is chosen, Or the following processings are carried out when the directions same with being chosen through the switches 2 and 3 mentioned above by carrying out voice input of the menu wished to have through a voice recognition unit 30 through a microphone 31 are made from the recognition control section 35 to the actuation control section 5.

[0029] That is, if a driver inputs the destination by voice or switch actuation based on the map on a display 14, the present location of a car will be called for in the current position calculation section 6, cost count will be carried out with a Dijkstra method between the destination and a its present location, and processing which searches for the most short-distance path from a its present location to the destination as an induction path will be performed. And an induction path is displayed on the road map on a display 14 in piles, and the suitable root for a driver is shown. Since the computation which searches for such an induction path, and guidance processing are the processings generally known well, explanation is omitted.

[0030] Next, the actuation in a voice recognition unit 30 is explained with reference to the flow chart of <u>drawing 3</u> . In

step S10 of the beginning at the time of starting, it judges whether there is any user setup. A user setup here is a setup of a point (point information which is things other than the address name of a place or a facility name, and is registered as memory point registration in the navigation system) to make into the object of speech recognition specially, for example, the symptom of a speech recognition result, etc. the case where such a user setup is not made -- (S10:NO) -- although it shifts to S30 as it is, if a user setup is made (S10:YES), after inputting the established state (S20), it will shift to S30.

[0031] In S30, the condition of a navigation system, for example, the condition of having said, "a map scale current on display is the road map of 1/10,000, and there is no detailed map in a display 14 more than this" etc., is incorporated. In addition, since there is also the condition that a "restaurant list", a "hot spring list", "golf course Rust", etc. are displayed, as a display of those other than a map in looking for the destination for example, according to a genre, the condition of saying the list of which genres is displayed in that case is incorporated.

[0032] in addition, the input of the established state in these [S20] and incorporation of the system state of S30 -- the recognition control section 35 of drawing 2 -- the input from the actuation control section 5 -- and it will incorporate. And in S40 continuing, the recognition control section 35 performs dictionary assignment to the dictionary Management Department 34 based on the system state incorporated in the established state inputted in S20, and S30. Then, the dictionary Management Department 34 performs a dictionary setup to the recognition processing section 33 based on the dictionary assignment. For example, all the vocabularies that can be recognized are contained, and out of it, the dictionary data (base dictionary) shown in drawing 5 extract only a predetermined thing, and set up the dictionary data (selection dictionary) shown in drawing 6 . In addition, suppose that it mentions later about this concrete setup.

[0033] In this way, if the preparation for speech recognition is completed, speech recognition will be performed in S60 and it will judge whether the speech recognition was successful. In addition, speech recognition is performed as follows. As mentioned above, while the PTT switch which is not illustrated is pushed, only the voice data inputted through the microphone 31 is outputted to the recognition processing section 33 from the input signal processing section 32. Therefore, if there is an input of the voice data from the input signal processing section 32, the recognition processing section 33 will collate using the dictionary data set up at the dictionary Management Department 34, and will perform recognition processing. And this manipulation routine is ended as it is noting that speech recognition will be failure (S60:NO), if abnormalities are in taking in of voice data or fault, like there is no match is detected as a result of collating using dictionary data.

[0034] On the other hand, when speech recognition is successful, (S60:YES) and the recognition control section 35 output the recognition result to the actuation control section 5. And a recognition result carries out an audio response through the voice output control section 11 and a loudspeaker 12 from the actuation control section 5 (S70). If a user can judge whether the directions which he meant are recognized correctly and is correctly recognized by the audio response of this recognition result, by inputting "yes", for example with voice, or operating a definite predetermined switch, he will become user demand decision (S80:YES), and will shift to S90 by it. In addition, when a user demand is not decided, it returns to S60 and recognition processing to the voice data inputted again is performed. Moreover, about user demand decision, the switch for definite references is formed, for example in the device switch 2 or the remote control switch 3, and you may judge by the switch actuation.

[0035] In S90, the recognition control section 35 answers demand decision to the actuation control section 5. When it is a demand the voice input from a user "changes a map scale into 1/20,000" in the condition that the map of a scale of 1/10,000 is shown on the display 14 by this, and the demand is decided, the actuation control section 5 will perform processing which changes into 1/20,000 the scale of the map currently displayed on the display 14. Moreover, when it is a user demand like "setting up the destination", demand implementation cannot be performed if there is no point information made into the destination. Therefore, in S20 under processing of drawing 3 performed again, it inputs that a user setup is in the condition of "setting up the destination" in this case, and the dictionary edit and a setup for setting up the destination are performed in S40 and S50 based on that established state. And speech recognition processing is performed. Thus, speech recognition processing is repeated until the function which a user demands is realized by the navigation system 1.

[0036] Although drawing 3 explained overall actuation with a voice recognition unit 30, since the description is in the dictionary edit and a setup in S40 and S50, it explains further, giving an example about this point. For example, as shown in drawing 4 (A), when a speech-recognition function start in the condition that the list display of a "restaurant" be carried out to the display 14, it be clear to display this restaurant list according to actuation of a user, and it be unthinkable that a user perform the demand about map actuation, such as "modification of the map sense", and "modification of a map scale", in this condition. Moreover, it is unthinkable to be required in this condition also about the data about the hot spring and golf course which are demanded when other lists, for example, a "hot spring list", and "golf course lists" are displayed.

[0037] Then, that a user requires in the condition that the restaurant list is displayed like drawing 4 (A) can assume that

.a genre called assignment of the store name of a restaurant itself or a restaurant is either of the genre assignment further distinguished in a detail, and it can narrow it down. Then, the recognition control section 35 in drawing 2 acquires the condition of saying that the restaurant list is displayed from the actuation control section 5, and performs the assignment "the dictionary about a restaurant" to the dictionary Management Department 34.

[0038] From the base dictionary (refer to drawing 5) memorized beforehand, the dictionary Management Department 34 edits the selection dictionary (refer to drawing 6) which extracted a part for the need based on dictionary assignment (a part for or needlessness deletion), and sets it as the recognition processing section 33. Since five items of all prefectures (however, Nagoya-shi contains here), cities, wards, towns, and villages, a genre, a detail, and conditions are set up for every recognition vocabulary, the base dictionary shown in drawing 5 will extract only the recognition vocabulary which has the genre a "meal" based on the genre of them in this case, and will set up the selection dictionary shown in drawing 6 . Thus, although there are [be / it / under / drawing 5 / setting] the three recognition vocabularies "OO taste", "Izu **-cho", and "Izumi-shi", for example when a selection dictionary is set up, the selection dictionary (drawing 6) which deleted a recognition vocabulary called "Izu **-cho" and "Izumi-shi" of incorrect recognition where possibility is high to "OO taste" can be set up. Therefore, when a user wants to specify "OO taste", the "OO taste" will be recognized appropriately.

[0039] Moreover, voice input is carried out ["taste / OO"], and as shown in drawing 4 (B), a setup of the following selection dictionaries is made in the condition that the location of "OO taste" is displayed on the display 14 with the circumference map. That is, since the map shown in this drawing 4 (B) displays according to a demand of a user, it is hard to think that "modification of a display map scale", "scrolling of a display position", "it considering as the destination", and the contents of "considering as a shunt" are assumed as next directions, for example, other lists of golf courses etc., audio volume modification, etc. are directed. Therefore, dictionary assignment is carried out to setting up the selection dictionary extracted only to the command which performs map actuation to the dictionary Management Department 34 based on the condition of saying that the recognition control section 35 in this case shows the map according to a demand of a user.

[0040] Thus, the selection dictionary which contains only a required recognition vocabulary in the condition of having been changed is set up at any time as the condition is changed based on actuation of a user. That is, since the recognition vocabulary considered to be the need from the condition of the navigation system 1 in the time remains as it is, and is confirmed and the other recognition vocabulary becomes invalid as dictionary data, the speech recognition about the vocabulary which should be recognized essentially is appropriately realizable, being able to prevent incorrect recognition as much as possible.

[0041] In the 1st example which carried out the [2nd example] ****, although the selection dictionary shown in drawing 6 by extracting only the recognition vocabulary from which the genre serves as a "meal" in the base dictionary shown in drawing 5 was set up, when it does in this way, about the recognition vocabulary which is not contained in the selection dictionary of drawing 6 , it completely becomes the outside of an object in the case of recognition. Of course, if it is only the recognition vocabulary which must have been inputted in the state of the system in the time as mentioned above, it will be satisfactory in any way also as outside of an object. However, although it cannot say that it must have been inputted, a thing called a recognition vocabulary with the low possibility also exists. When the recognition vocabulary is also included into the selection dictionary, the vocabulary which has the possibility of incorrect recognition in dictionary data will increase after all.

[0042] The following dictionaries are built in the 2nd example which took the example in this point. That is, as shown in drawing 7 , the item of a "priority" is further set up for every recognition vocabulary. And the whole of the priority is set to 0 in the state of the base dictionary shown in drawing 7 , and in considering as the selection dictionary shown in drawing 8 , it sets the priority as 10 or 5 only about a predetermined recognition vocabulary. When shown in drawing 8 , about the recognition vocabulary which serves as a "meal" in the genre item, a priority is carried out that it is easy to consider rather than the other recognition vocabulary as the candidate for recognition as 0 to 10, or 5. However, in this example, a priority is set to 5 about "two recognition vocabularies only made into the "classification title" in the detail item also in the recognition vocabulary which serves as a "meal" in the genre item, i.e., "Japanese-style food", and Chinese", and the other four recognition vocabularies have set the priority to 10.

[0043] If it does in this way, even if three recognition vocabularies with the high possibility of the incorrect recognition of "OO taste", "Izu **-cho", and "Izumi-shi" which mentioned above, for example exist A priority is highly set up with 10, and possibility of being recognized accidentally [vocabulary / low / of a priority / recognition] since the priority is low set up with 0 becomes low, and, as for "OO taste", can prevent incorrect recognition as much as possible as a result, as for other "Izu **-cho" and "Izumi-shi." Moreover, although a priority is low, since it finally exists as a vocabulary for recognition in a selection dictionary also about the recognition vocabulary to which the priority is set low, obtaining as a recognition result is possible. therefore -- since [for example,] it is not that for which it asks from a user although outputted as a recognition result in order of the **** vocabulary with a priority high as a voice recognition unit 30 -- another recognition result -- ****** -- it needs -- if there are directions, finally, the low

recognition vocabulary of the priority is outputted as a recognition result, and can also become the thing of a request of a user . That is, in the situation which does not correspond and go out by perfect alternative used of /Not being carried out, the technique of setting up a priority in this way is effective.

[0044] Two examples beyond [the 3rd example] can also be used as a voice recognition unit for inputting directions of the goods of choice for example, in an automatic selling system etc. besides it, although explained as an example which used the voice recognition unit 30 for a user's directions input in a navigation system 1.

[0045] For example, the automatic selling system of tobacco is considered. As the base dictionary in this case is shown in drawing 9 (A), three items of a brand, a classification, and a setup are set to every ID (number) 1 and 2 and 3 --. Here, the brand of all the tobacco whose sale on the theory is enabled with automatic selling equipment is set to a brand. That is, whether it actually sells with the automatic selling equipment sets up the brand of all the tobacco that is circulating not related. However, in order to make applicable to recognition only the brand actually made applicable to selling with the automatic selling equipment since there is a limit in the class of tobacco which can be actually sold with one automatic selling equipment, a selection dictionary as shown in drawing 9 (B) is set up. That is, in the item of "a setup", only the brand which can actually be sold is set to "ON" and it sets up with "OFF" except it. The selection dictionary in which only the brand with which this setup was set to "ON" was specifically made into the recognition vocabulary will be built, and speech recognition based on that selection dictionary will be performed. In addition, the manager of automatic selling equipment etc. will specifically do a manual setup of the setup of this ON-OFF.

[0046] If it does in this way, since dictionary data can be adjusted according to whether choose the tobacco of what kind of brand and it considers as the object of automatic sale, it is lost that tobacco of the brand which is not carried with the automatic selling equipment is made into an incorrect recognition result. Therefore, the user-friendliness for the user of automatic selling equipment also improves.

[0047] Moreover, about the brand which is not carried with the automatic selling equipment, how to set up a priority low is employable like the case of the 2nd example mentioned above. However, since the brand which is not carried finally cannot be sold in this case even if it recognizes it, the direction made into the invalid as dictionary data can say that it is desirable rather than it makes a priority low.

[0048] Although the example which carried out [other] **** explained the voice recognition unit 30 as an example applied to the navigation system 1 or the automatic selling system, as an application place, many things are considered besides it. If the situation that the contents of directions from a user are limited in a certain condition arises in short when the condition of a system changes based on the directions from a user, the effectiveness of preventing incorrect recognition in the condition as much as possible will be acquired by setting up the selection dictionary which extracted the recognition vocabulary.